

REMARKS

This is a full and timely response to the outstanding Office Action mailed May 17, 2005. Upon entry of the amendments in this response, claims 2, 5, 13-16, 18-20 and 35-37 remain pending. In particular, Applicants have amended claims 2, 5, 15, 35-37, and canceled claims 33 and 34. Applicants reserve the right to pursue the subject matter of the canceled claims in a continuing application, if Applicants so choose, and do not intend to dedicate the canceled subject matter to the public. Reconsideration and allowance of the application and presently pending claims are respectfully requested.

A. Allowable subject matter

Applicants wish to express their sincere gratitude for Examiner's indication of allowability for claims 5 and 35. In this respect, the Office Action states: "*Claims 5 and 35 [are] objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.*"

Applicants have rewritten each of claims 5 and 35 in independent form including all the limitations of the base claim and any intervening claims. Applicants respectfully request allowance of claims 5 and 35.

B. Claim Objections

Statement of the objection

The Office Action states: "*Claim 2 is objected to because of the following informalities: It has been held that the recitation that an element is "being adapted to" reform [sic] a function is not a positive limitation but only requires ability to so perform. It does not constitute a limitation in any patentable sense. In re Hutchison, 69 USPQ 138. Claim 2, lines 4-6 and "circuit being adapted to provide" perhaps should read as – circuit provides –. Appropriate correction is required.*"

Response to the objection

In response to the objection, Applicants have currently amended the pertinent parts of claim 2 from “*circuit being adapted to provide*” to “*circuit providing*.” Applicants respectfully request withdrawal of the objection, followed by allowance of claim 2.

C. Rejection of claims under 35 U.S.C. §112

Statement of the rejection

The Office Action states: “*Claims 2, 34 and 36 are rejected under 35 U.S.C. 112 second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. With respect to claim 2, the phrase “a gas detector configured to retain a volume of gas renders the claim indefinite because it fails to define the necessary structure to retain the volume of gas.”* The Office Action further points out that claims 34 and 36 are also rejected because of use of the phrase “configured to” in these two claims.

Response to the rejection

Claim 2

Applicants have suitably amended claim 2 to eliminate the phrase “configured to.” Consequently, Applicants respectfully request withdrawal of the rejection followed by allowance of claim 2.

Claim 34

Claim 34 has been cancelled. Consequently, the rejection of this claim has been rendered moot.

Claim 36

Applicants have currently amended claim 36 to eliminate the phrase “configured to.” Consequently, Applicants respectfully request withdrawal of the rejection followed by allowance of claim 36.

D. Rejections of claims under 35 U.S.C. §102**Statement of the rejection**

The Office Action states: “*Claims 2, 15, 33, 34, 36 and 37 are rejected under 35 U.S.C. 102(b) as being anticipated by Spergel et al. (US Patent 3,418,474).*”

Response to the rejection

A proper rejection of a claim under 35 U.S.C. §102 requires that a single prior art reference disclose each element of the claim. Accordingly, the single prior art reference must properly disclose, teach or suggest each element of the claimed invention. Provided below are the responses to each of the rejections of claims 2, 15, 33, 34, 36 and 37 under 35 U.S.C. §102(b).

Claim 2

In rejecting Applicants’ claim 2, the Office Action asserts that Spergel teaches all the elements of Applicants’ claim 2. Spergel describes his invention in column 2, lines 38-47 as follows:

Generally, the detector of FIG. 1 is shown as comprising **an electrically conducting, metallic, medial plate 20** having therethrough a plurality of openings 22, each of which is cylindrically developed about an axis that is perpendicular to the parallel faces of plate 20. At the rearward face of plate 20 is **an electrically non-conducting plastic plate 24** which is provided with a multiplicity of depressions 26, the cylindrical walls of which are developed about the same axis as are the cylindrical walls of apertures 22...
(Emphasis added)

On the other hand, Applicants have described a representative embodiment of their invention as follows:

Referring now to Fig. 4, a representative embodiment of a pixelated gas detector will be described in greater detail. As shown in FIG. 4, gas detector 100 includes **a substrate 402**. Substrate 402 functions as a support structure for a series of conductive, e.g. metal, vias 404 and detection circuits. Typically, the detection circuits (individual ones of which are not shown in FIG. 4) are arranged in layer 406, with each detection circuit and a corresponding via 404 being associated with a particular region of a volume of gas 408.
(page 9, lines 10 – 13, Emphasis added)

Applicants have currently amended claim 2 to provide a better definition of Applicants’ invention as described above. Applicants have been unable to find in Spergel a substrate, specifically a substrate as included in Applicants’ currently amended claim 2. Consequently, for at least this reason, Applicants respectfully assert that the single prior art reference (Spergel) does not properly disclose, teach or suggest each element of the claimed invention, as is required for a

proper rejection of claim 2 under 35 U.S.C. §102(b). Applicants therefore request withdrawal of the Office Action rejection of claim 2, followed by allowance of claim 2.

Claim 15

In rejecting Applicants' claim 15, the Office Action asserts that Spergel teaches all the elements of Applicants' method claim 15. Applicants have amended method claim 15 to clarify certain method steps. Currently amended claim 15 is reproduced below for easy reference:

15. (Currently amended) A method for imaging with the use of x-rays, said method comprising:

providing a substrate;

forming on the substrate, a first chamber, a second chamber, and an x-ray stopping component between the first chamber and the second chamber;

generating a first signal indicative of an intensity of a first portion of x-rays radiating into the first chamber, the first signal corresponding to at least a first pixel; and

generating a second signal indicative of an intensity of a second portion of x-rays concurrently radiating into the second chamber, the second signal corresponding to at least a second pixel, wherein the first portion of x-rays is different than the second portion of x-rays.

(Emphasis added)

Applicants respectfully assert that Spergel does not teach or disclose at least the emphasized parts of Applicants' claim 15 above. Consequently, Applicants respectfully assert that the single prior art reference (Spergel) does not properly disclose, teach or suggest each element of the claimed invention, as is required for a proper rejection of claim 2 under 35 U.S.C. §102(b). Applicants therefore request withdrawal of the Office Action rejection of claim 15, followed by allowance of claim 15.

Claims 33 and 34

Claims 33 and 34 have been canceled thereby rendering moot the rejection of these claims.

Claims 36 and 37

Applicants respectfully assert that independent claim 35 is allowable. Because independent claim 35 is allowable, claims 36 and 37 that each depend directly on claim 35 are also allowable as a matter of law. *In re Fine*, 837 F. 2d 1071 (Fed. Cir. 1988). Consequently,

Applicants respectfully request that rejection of claims 36 and 37 under 35 U.S.C. §102(b) be withdrawn, and that these claim be placed in allowance.

E. Rejections under 35 U.S.C. §103(a)

1) Statement of the rejection

The Office action states: “*Claims 13, 14, and 18 are rejected under 35 U.S.C. §103(a) as being unpatentable over Spergel et al. (US Patent 3,418,474) as applied to claims 2 and 15 above, and further in view of McDaniel (US Patent 4,780,897).*”

Response to the rejection

Claims 13 and 14

Attention is respectfully drawn to MPEP 706.2(j) *Contents of a 35 U.S.C. 103 Rejection*, which states in pertinent part:

To establish a *prima facie* case of obviousness, **three basic criteria** must be met. First, there must be some **suggestion or motivation**, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be **a reasonable expectation of success**. Finally, the prior art reference (or references when combined) **must teach or suggest all the claim limitations**. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art and not based on applicant’s disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). See MPEP § 2143 - § 2143.03 for decisions pertinent to each of these criteria. (Emphasis added)

The first of the three basic criteria that must be met to establish a *prima facie* case of obviousness relates to some suggestion or motivation being present to modify the reference or to combine reference teachings. As a part of the reasons for rejecting claims 13 and 14, and claim 18 as well, the Office Action states: *It would have been obvious to one [of] ordinary skill in [the] at the time invention was made to employ the teachings of potentially changing operating characteristics of the gas detector of McDaniel in the X-ray imaging system of Spergel because it would provide the imaging system with a dual energy difference imaging capabilities using the gas detector.*” Applicants respectfully traverse this statement, as the cited references of Spergel and McDaniel do not provide, individually or in combination, a suggestion/motivation to modify the cited references or to combine reference teachings in the manner cited above. Applicants specifically traverse that part of the Office Action statement above which reads: “*the X-ray imaging*

system of Spergel because it would provide the imaging system with a dual energy difference imaging capabilities using the gas detector.” To the contrary Spergel teaches away from such a suggestion as reflected in Spergel’s disclosure in col.1 lines 51-56, which is reproduced below for easy reference:

The primary objective of the present invention is to provide a planar array of gas detectors that are sufficiently small and closely packed to provide high spatial resolution and that are provided with virtually identical mechanical structure and gas pressure to achieve uniformly high sensitivity.

Therefore, Applicants respectfully assert that one of ordinary skill in the art would not be motivated to modify Spergel to “provide the imaging system with a dual energy difference imaging capabilities,” as stated in the Office Action. Furthermore, it is unfortunate that the Office Action fails to point out where in the cited references can be found a suggestion or motivation to modify or combine reference teachings.

Consequently, Applicants respectfully assert that the Office Action rejection fails to meet the first of three criteria required to establish a *prima facie* case of obviousness.

The Office Action rejection further fails to meet the third of the three criteria mentioned in the MPEP reference above, i.e., “the prior art reference (or references when combined) must teach or suggest all the claim limitations.” Claims 13 and 14 are dependent upon independent claim 2, and therefore each of claims 13 and 14 incorporates all the elements of independent claim 2. Applicants respectfully assert that the cited prior art references fail to individually or in combination, teach or suggest, certain elements of Applicants’ independent claim 2. Specifically, the cited prior art references fail to at least teach or suggest: “a substrate,” as well as “a gas detector formed on the substrate,” which are elements of currently amended claim 2.

Because each of claims 13 and 14 incorporates all the elements of independent claim 2, Applicants respectfully submit that the Office Action rejection fails to meet the third of the three criteria mentioned in the MPEP reference above.

For at least the above-mentioned reasons, Applicants respectfully assert that a *prima facie* case of obviousness, as required for a proper rejection of claims 13 and 14 under 35 U.S.C. 103(a) has not been established. Consequently, Applicants request withdrawal of the rejection, followed by allowance of claims 13 and 14.

Claim 18

In the interests of brevity, the arguments made above with reference to the rejection of claims 13 and 14, vis-à-vis failure to meet the first MPEP criteria, will not be repeated here because the arguments are applicable to claim 18 as well.

Applicants respectfully assert that the Office Action rejection of claim 18 further fails to satisfy the third of the three criteria mentioned in the MPEP reference. Claim 18 is dependent upon independent claim 15, thereby incorporating all the elements of independent claim 15. Applicants respectfully assert that the cited prior art references fail to teach or suggest, individually or in combination, certain elements of Applicants' independent claim 15. Specifically, the cited prior art references fail to at least teach or suggest: "providing a substrate," as well as "forming on the substrate, a first chamber, a second chamber, and an x-ray stopping component between the first chamber and the second chamber."

Because claim 18 incorporates all the elements of independent claim 15, Applicants respectfully submit that the Office Action rejection fails to meet the third of the three criteria mentioned in the MPEP reference above.

For at least the above-mentioned reasons, Applicants respectfully assert that a *prima facie* case of obviousness, as required for a proper rejection of claim 18 under 35 U.S.C. 103(a) has not been established. Consequently, Applicants request withdrawal of the rejection, followed by allowance of claim 18.

2) Statement of the rejection

The Office action states: "*Claim 16 is rejected under 35 U.S.C. §103(a) as being unpatentable over Spergel et al. (US Patent 3,418,474) as applied to claim 15 above, and further in view of Siedband (US Patent 5,308,988).*"

Response to the rejection

Claim 16

The first of the three basic criteria that must be met to establish a *prima facie* case of obviousness relates to some suggestion or motivation being present to modify the reference or to combine reference teachings. As a part of the reason for rejecting claim 16 the Office Action states: *It would have been obvious to one [of] ordinary skill in [the] at the time invention was made to employ the pixel data processing and displaying (rendering) teachings of Siedband in the X-ray*

imaging system of Spergel because it would provide enhanced visual interpretation of the image.”

Applicants respectfully traverse this statement, as the cited references of Siedband and Spergel do not provide, individually or in combination, a suggestion/motivation to modify the cited references or to combine reference teachings in the manner cited above. Applicants specifically traverse that part of the Office Action statement above which reads: “*the X-ray imaging system of Spergel because it would provide enhanced visual interpretation of the image.*” Spergel does not suggest a motivation or reason “to enhance visual interpretation” of his display system which uses a cathode ray tube and is described in Spergel’s disclosure col.4 lines 35-40 as follows:

The outputs of amplifiers 66 are directed through a series of pulse shapers 68 and a series of resistors 70 to the vertical deflection plates of cathode ray tube 48. Each of resistors 70 is different in magnitude from the others so that each produces a different deflection from the others in cathode ray tube 48...
(Emphasis added)

Spergel uses a *deflection* system rather than a *pixel data processing and displaying (rendering)* system and does not disclose a shortcoming in this deflection system. Therefore, Applicants respectfully assert that one of ordinary skill in the art would not be motivated to modify Spergel to “provide enhanced visual interpretation of the image,” as stated in the Office Action. Furthermore, it is unfortunate that the Office Action fails to point out where in the cited references can be found a suggestion or motivation to modify or combine reference teachings.

Consequently, the Office Action rejection fails to meet the first of three criteria required to establish a *prima facie* case of obviousness.

The Office Action rejection further fails to meet the third of the three criteria mentioned in the MPEP reference above, i.e., “the prior art reference (or references when combined) must teach or suggest all the claim limitations.” Claim 16 is dependent upon independent claim 15, and therefore incorporates all the elements of independent claim 15. Applicants respectfully assert that the cited prior art references fail to individually or in combination, at least teach or suggest: “providing a substrate,” as well as “forming on the substrate, a first chamber, a second chamber, and an x-ray stopping component between the first chamber and the second chamber.”

For at least the above-mentioned reasons, Applicants respectfully assert that a *prima facie* case of obviousness, as required for a proper rejection of claim 16 under 35 U.S.C. 103(a) has not

been established. Consequently, Applicants request withdrawal of the rejection, followed by allowance of claim 16.

3) Statement of the rejection

The Office action states: “*Claims 19 and 20, are rejected under 35 U.S.C. §103(a) as being unpatentable over Spergel et al. (US Patent 3,418,474) as applied to claim 15 above, and further in view of Little et al. (US Patent 5,119,408).*”

Response to the rejection

Claims 19 and 20

Applicants respectfully traverse the reasons for rejection provided in the Office Action because the reasons do not satisfy the criteria for establishing a *prima facie* case of obviousness. The first of the three basic criteria that must be met to establish a *prima facie* case of obviousness relates to some suggestion or motivation being present either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. It is unfortunate that the Office Action fails to point out where in the cited references can be found a suggestion or motivation to modify or combine reference teachings. Furthermore, as far as knowledge generally available is concerned, it will be relevant to point out that using hindsight is impermissible in carrying out a rejection under 35 U.S.C. 103(a).

With reference to the third of the three criteria mentioned in the MPEP reference above, i.e., “the prior art reference (or references when combined) must teach or suggest all the claim limitations,” Applicants respectfully assert that the cited prior art references fail to individually or in combination, teach or suggest, at least certain elements of Applicants’ claims 19 and 20. Claims 19 and 20 are dependent directly or indirectly upon independent claim 15, and therefore each of claims 19 and 20, incorporates all the elements of independent claim 15. The cited prior art references fail to at least teach or suggest: “*providing a substrate*,” as well as “*forming on the substrate*, a first chamber, a second chamber, and an x-ray stopping component between the first chamber and the second chamber.”

Applicants respectfully submit that for at least the above-mentioned reasons, a *prima facie* case of obviousness, as required for a proper rejection of claims 19 and 20 under 35 U.S.C. 103(a) has not been established. Consequently, Applicants request withdrawal of the rejection, followed by allowance of claims 19 and 20.

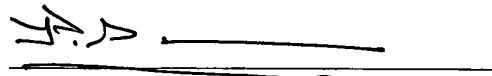
Prior Art Made of Record

The prior art made of record has been considered, but is not believed to affect the patentability of the presently pending claims.

CONCLUSION

In light of the foregoing amendments and for at least the reasons set forth above, Applicant respectfully submits that all objections and/or rejections have been traversed, rendered moot, and/or accommodated, and that the now pending claims 2, 5, 13-16, 18-20 and 35-37 are in condition for allowance. Favorable reconsideration and allowance of the present application and all pending claims are hereby courteously requested. If, in the opinion of the Examiner, a telephonic conference would expedite the examination of this matter, the Examiner is invited to call the undersigned representative at (404) 610-5689.

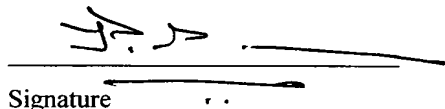
Respectfully submitted,



P. S. Dara
Registration No. 52,793

P. S. Dara
7115 Threadstone Overlook
Duluth, GA 30097
(404)-610-5689

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